

Application Number 10/053,173
Amendment dated November 23, 2004
Responsive to Office Action mailed August 24, 2004

REMARKS

This amendment is responsive to the Office Action dated August 24, 2004. Applicants have canceled claims 1-6, 9-10, 14-15, 17-21; amended claims 7, 11-13, and 22; and added new claims 23-28. Claims 7-8, 11-13, 16 and 22-28 are pending upon entry of this amendment.

Restriction Under 35 U.S.C. § 121

In the Office Action, the Examiner restricted claims 1-22 under 35 U.S.C. § 121 as follows:

- Group I. Claims 1-6, drawn to a method of molding, classified in class 264, subclass 1.33; and
- Group II. Claims 7-22, drawn to a molding apparatus, classified in class 425, subclass 139.

During a telephonic conversation with the Examiner on August 6, 2004, Applicants provisionally elected Group II, claims 7-22 with traverse. Applicants hereby confirm the election of claims 7-22 (Group II), *without traverse*. Applicants have canceled non-elected claims 1-6 at this time.

Claim Rejection Under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 7 and 8 under 35 U.S.C. 102(b) as being anticipated by Japanese Pub. No. (61-95911) (hereafter JP 61-95911). Independent claim 7 has been amended to include several limitations, including limitations formerly recited in claim 10. Claim 10 was not rejected by the Examiner in view of JP 61-95911. For this reason, the rejection in view of JP 61-95911 should have been overcome.

Nevertheless, Applicants wish to comment briefly on the Examiner's interpretation of JP 61-95911. Specifically, Applicants disagree with the Examiner's assertion that JP 61-95911 discloses a ground strap coupled to the moving side of the mold. JP 61-95911 fails to mention a "ground strap" whatsoever. Moreover, the Examiner has failed to establish that side 3 of JP 61-95911 is the moving side. It appears to Applicants that side 11 of JP 61-95911, which is not grounded, is the moving side.

These issues should be moot, however, in view of the amendments to claim 7.

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Claim Rejection Under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 7-9, 15, and 21 under 35 U.S.C. 103(a) as being unpatentable over Holmes (U.S. 4,374,636) in view of Grisell (U.S. 3,768,227); rejected claims 7-14, and 16-21 under 35 U.S.C. 103(a) as being unpatentable over Van Hout et al. (U.S. 6,238,197) in view of Grisell; rejected claims 7-9, 16, 17, and 21 under 35 U.S.C. 103(a) as being unpatentable over Kerfeld (U.S. 6,354,827) in view of Grisell; and rejected claims 7-9, 16, 17, 21 and 22 under 35 U.S.C. 103(a) as being unpatentable over Inaba et al. (U.S. 6,054,075) in view of Grisell.

Applicants respectfully traverse the rejections to the extent such rejections may be considered applicable to the amended claims. The applied references fail to disclose or suggest the inventions defined by Applicants' claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

All of the Examiner's rejections under 35 U.S.C. § 103 are essentially similar. In each rejection, the Examiner has cited a primary reference that discloses a molding tool, but lacks any suggestion of a substantially non-resistive path to ground coupled to the moving side of the molding tool. The Examiner cited Grisell as the secondary reference in each rejection, however, as disclosing a method of dissipating static electricity when molding plastic resins. The Examiner concluded that it would have been obvious to a person of ordinary skill in the art to modify the molding tools of Holmes, Van Hout, Kerfeld, or Inaba, with the teaching of Grisell to arrive at Applicants' claimed invention.

Applicants have amended independent claims 7 and 22 to clarify the invention. Applicants have also added new independent claims 23, 25 and 27. Applicants submit that the amended claims and new claims structurally distinguish any of the molding tools of Holmes, Van Hout, Kerfeld, or Inaba, modified by Grisell as proposed by the Examiner. Applicants also submit that the prior art lacks motivation that would have led a person of ordinary skill in the art to modify any of the molding tools of Holmes, Van Hout, Kerfeld, or Inaba. Applicants address both the structural distinctions between the amended claims and the applied prior art, and the lack of motivation to modify the tools of Holmes, Van Hout, Kerfeld, or Inaba in greater detail below.

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Independent claim 7, as amended, recites a molding tool comprising a moving side comprising a first mirror block; a non-moving side comprising a second mirror block, a stamper and an air interface between the second mirror block and the stamper; and a substantially non-resistive path to ground *coupled to the first mirror block of the moving side*. Independent claim 22 recites a molding system that includes the tool as recited in claim 7, and further includes a control unit coupled to the molding tool to control a molding process of the molding tool, and a robotic arm coupled to the control unit for receiving molded components from the molding tool.

New claims 23 and 25 concern molding tools that include stampers on both the moving and non-moving sides. New claim 23 recites a molding tool comprising a moving side comprising a first mirror block, a first stamper and a first air interface between the first mirror block and the first stamper; a non-moving side comprising a second mirror block, a second stamper and a second air interface between the second mirror block and the second stamper; a first substantially non-resistive path to ground *coupled to the first stamper of the moving side*; and a second substantially non-resistive path to ground *coupled to the second stamper of the non-moving side*.

New claim 25 recites a molding tool comprising a moving side comprising a first mirror block, a first stamper and a first air interface between the first mirror block and the first stamper; a non-moving side comprising a second mirror block, a second stamper and a second air interface between the second mirror block and the second stamper; a first substantially non-resistive path to ground *coupled to the first mirror block of the moving side*; and a second substantially non-resistive path to ground *coupled to the second mirror block of the non-moving side*.

New claim 27 recites a molding tool comprising a moving side comprising a first mirror block; a non-moving side comprising a second mirror block, a stamper and an air interface between the second mirror block and the stamper; and a substantially non-resistive path to ground *coupled to the stamper of the non-moving side*.

Applicants respectfully submit that the amended claims 7 and 22 and new claims 23, 25 and 27 clearly distinguish the teaching of Grisell and all the other applied references. In particular, none of the applied references discloses or suggests a substantially non-resistive path to ground coupled to either the mirror block or the stamper of a molding tool. Grisell appears to describe nothing more than the connection of a negative terminal of an e.m.f. source (a battery) to

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ground. For these reasons, the pending claims are clearly structurally distinguishable from the applied prior art.

The passages of Grisell cited by the Examiner disclose molding techniques for plastic wrapping. In clear contrast to the molds described by Holmes, Van Hout, Kerfeld, or Inaba, the mold of Grisell includes "a plurality of conductors in contact with a mold release agent and contactable with the material to be molded." See column 3, lines 64-66. Grisell indicates that "each conductor is connected to the positive terminal of an e.m.f. source." See column 3, line 66 to column 4, line 1. Moreover, Grisell indicates that the e.m.f. source is the positive pole of a storage battery or dry cell battery. See column 3, lines 11-12. While Grisell indicates that the negative terminal is connected to ground, Grisell lacks any suggestion of the attachment of a mold stamper or mirror block to ground, as recited in Applicants' claims.

Applicants also submit that the teaching of Grisell is irrelevant to the molds described by Holmes, Van Hout, Kerfeld, or Inaba. For example, one clear difference between Grisell and the other applied reference is that in Grisell, the mold itself includes an e.m.f. source (a battery) that introduces charge, whereas the molds of Holmes, Van Hout, Kerfeld, or Inaba do not include a battery source that introduces charge into the mold cavity. Thus, it is not apparent from the teaching of Holmes, Van Hout, Kerfeld, or Inaba that any grounding would be needed or otherwise even useful.

As none of the molds of Holmes, Van Hout, Kerfeld, or Inaba introduce charge via a battery source, it is unclear why a person of ordinary skill in the art would have been motivated to connect anything on the moving side of the molds of Holmes, Van Hout, Kerfeld, or Inaba to ground, much less the specific stamper or mirror block as now recited in Applicants' claims. Without the introduction of charge as performed by Grisell, it would appear that the elimination of such change would be unnecessary.

Applicants' disclosure appears to be the only reference of record that even recognizes the existence of problematic static charge within the mold cavity of molds that are not specifically coupled to a battery source like that of Grisell. In particular, to Applicants' surprise, Applicants observed an erosion pattern of an eroded mirror block when examined under a microscope after a number of injection molding cycles. The microscopic inspection revealed that the erosion in the mirror block looked similar to metallic surfaces finished using Electric Discharge Matching

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(EDM) processes. For this reason, Applicants hypothesized that static charge within the mold cavity was dissipating between the stamper and the mirror block causing sparks that would systematically erode the mirror block in a manner similar to EDM processes. See Applicants' specification page 7, lines 7-12. Applicants' claim feature of the substantially non-resistive path to ground was specifically introduced to molds to address the problem that Applicants' identified in such molds, which do not include a battery source like the molds of Grisell. None of the applied primary references even recognize the existence of problematic static charge in the mold cavity, nor the dissipation of such charge between the stamper and the mirror block, which can reduce the useful life of the stamper.

Accordingly, without access to Applicants' disclosure, a person of ordinary skill in the art would not have even recognized that problematic static charge may be present in the molds of Holmes, Van Hout, Kerfeld, or Inaba. Moreover, without a recognition of the existence of such problematic static charge, it is totally unclear why a person of ordinary skill in the art would have been motivated to address the problem, much less look to Grisell for a solution.

In short, the amended claims structurally distinguish the references applied by the Examiner. Moreover, the prior art lacks motivation that would have led a person of ordinary skill in the art to address the problem of static charge in the molds of Holmes, Van Hout, Kerfeld, or Inaba, much less turn to Grisell for a solution. Specifically, Applicants submit that the teaching of Grisell is irrelevant to Holmes, Van Hout, Kerfeld, or Inaba insofar as Grisell specifically introduces change into the molding process via a battery source. Therefore, a person of ordinary skill in the art would not have been motivated to modify the molds of Holmes, Van Hout, Kerfeld, or Inaba with the teaching of Grisell, as the molds of Holmes, Van Hout, Kerfeld, or Inaba do not include a battery source.

All claims in this application are in condition for allowance. Applicants respectfully request reconsideration and prompt allowance of all pending claims. Please charge any


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additional fees or credit any overpayment to deposit account number 09-0069. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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By:

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